AMENDMENTS TO THE SPECIFICATION

Please replace Paragraphs [0016], [0039], [0040], and [0052] with the following paragraphs rewritten in amendment format:

[0016] Figure 9A [[9]] is an enlarged, exploded view of fuel cells according to a second embodiment of the present invention and 9B is a partial illustration of the electrode surface with alternative electrochemically active regions;

[0039] Once more referring to FIG. 3, it can be seen that the grooves 66 and channels 80 meander back and forth across the surface of the plate 56. In such a serpentine pathway, the gaseous reactants undergo tortuous flow throughout each of the grooves 66, and therefore, the electrochemically active regions of the electrode are subjected to differing amounts of reactants at different areas of the electrode. In order to increase the current density in areas of the electrode that are not subjected to a satisfactory amount of reactant or to lower the current density in areas that are subjected to a surplus of gaseous reactant which creates either too much heat or water, the catalyst loading may be adjusted by either increasing or decreasing the loading, depending on the current density at each area of the electrode. As such, using the bipolar plate depicted in FIG. 3 as an example, an electrode that utilizes a stripe-shaped pattern of electrochemically active regions may be used where alternating electrochemically active regions include variable catalyst loadings. Such an electrode 135 is shown in [[FIG. 9]] FIGS. 9A and 9B. As shown in FIG. [[9]] 9A, electrochemically active regions 136 where the catalyst loading is increased or decreased are in line with, or correspond to, a groove 140 of the bipolar plates 139. As such, the expensive catalyst will not be wasted in the stripe-shaped areas 138 that are

in contact with a land 142 of the bipolar plate 139, which does not contribute a substantial amount to the overall reaction of the fuel cell. Moreover, using the bipolar plate 56 in FIG. 2 again as an example, the grooves 66 undergo turns in the serpentine pathway. In these turns, the gaseous flow may be restricted and therefore, the catalyst loading may be increased in these areas. Further, different grooves 66 may experience differing amounts of gaseous reactants depending on the distance away form the inlet manifold 72 due to a decrease in pressure at greater distances from the manifold 72. As such, these areas mandate an increased amount of catalyst in order to increase the current density to a desired level. This phenomenon is graphically depicted in FIG. 10, where it can be seen that as the distance (groove number) from the inlet manifold increases, the current density decreases.

[0040] It should be noted that although the above embodiment has been described with stripe-shaped electrochemically active regions 136, the present invention should not be limited thereto. More particularly, the electrochemically active regions 136 could be dot-shaped<u>, such as is shown in FIG. 9B,</u> or any other shape that provides localized control of the current density over the surface of the electrode 135.

[0052] In order to prepare the electrode depicted in FIG. [[9]] <u>9A</u> with the stripe-shaped electrochemically active regions 136, a direct writing method is preferably used, but the above decal and drawbar method may also be used. Direct writing is described in U.S. Pat. No. 4,485,387 to Drumheller and an example is shown in FIG. 12. A manufacturer of a device capable of the direct writing technique is MicroPen, Inc., which is a subsidiary of Ohmcraft, Inc. in Honeoye Falls, N.Y.